

claims

1. Highly oxidation resistant component (1),  
having a substrate (4),  
5 a protective layer (17),  
which consists of  
an intermediate MCrAlY layer zone (16) on or near the substrate (4),  
which has the composition (in wt%): 10% - 50% Co, 10% - 40% Cr, 6% -  
15% Al, 0,02% - 0,5% Y, Ni base,  
10 and an outer layer zone (19)  
which has the structure of the phase  $\gamma$ -Ni and has a content of  
Aluminum of up to 6.5wt% and  
consists of pure  $\gamma$ -Ni phase and  
which has the composition (in wt%): 15 - 40% Cr, 5 - 80% Co, 3 - 6.5%  
15 Al and Ni base,  
wherein the outer layer zone (19) is onto the intermediate MCrAlY  
layer zone (16),  
wherein M is at least one element out of the group Co, Fe, Ni.
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2. Component according to claim 1,  
wherein the protective layer (17) consists of two separated layers  
(16, 19).
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3. Component according to claim 1,  
with a continuously graded concentration of the composition of the  
intermediate and outer zone (16, 19) inside the protective layer  
(17).
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4. Component according to claim 1,  
wherein the outer layer zone (19) is thinner than the intermediate  
layer (16) on or near the substrate (4).
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5. Component according to claim 1,  
wherein the intermediate MCrAlY-layer (16) or the outer layer zone

(19) contains at least one further element such as (in wt%): 0,1% - 2% Si, 0,2% - 8% Ta or 0,2% - 5% Re.

- 5 6. Component according to claim 1,  
wherein the Yttrium of MCrAlY of the intermediate MCrAlY zone (16) or the outer zone (19) is added and/or at least partly replaced by at least one element out of the group Hf, Zr, La, Ce and/or other elements of the Lanthanide group.
- 10 7. Component according to claim 1,  
wherein the outer layer (19) zone has the composition (in wt%): 20 - 30% Cr, 10 - 30% Co, 5 - 6% Al and Ni base.
- 15 8. Component according to claim 1,  
wherein the MCrAlY layer zone (16, 19) contains Ti (Titanium) and/or Sc (Scandium).
- 20 9. Component according to claim 1,  
wherein on the outer layer zone (19) a thermal barrier coating (13) is formed.
10. Component according to claim 5,  
wherein the rhenium content (Re) is between 0.2 and 2wt%.
- 25 11. Component according to claim 9,  
wherein a heat treatment prior to applying a thermal barrier coating is carried out  
in an atmosphere with a low oxygen partial pressure,  
especially at  $10^{-7}$  and  $10^{-15}$  bar.

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